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09/05/2003

Gary K. Law

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EXAMINER

PHAM, THOMAS K

ART UNIT

PAPER NUMBER

2121

DATE MAILED: 06/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/655,929

Applicant(s)

LAW ET AL.

Examiner

Thomas K. Pham

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-13, 15-19, 22-29, 31-37, 40, 43-53, 56 and 59-63 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 14, 20, 21, 30, 38, 39, 41, 42, 54, 55, 57 and 58 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                                    |

**First Action on the Merits**

1. Claims 1-63 of U.S. Application 10/655,929 filed on 09/05/2003 are presented for examination.

**Quotations of U.S. Code Title 35**

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. The claims and only the claims form the metes and bounds of the invention. "Office personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ541, 550-551 (CCPA 1969)" (MPEP p2100-8, c 2, I 45-48; p 2100-9, c 1, I 1-4). The Examiner has full latitude to interpret each claim in the broadest reasonable sense. The Examiner will reference prior art using terminology familiar to one of ordinary skill in the art. Such an approach is broad in concept and can be either explicit or implicit in meaning.

#### **Information Disclosure Statement**

7. The information disclosure statements (IDS) submitted on 02/02/2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

**Claim Rejections - 35 USC § 103**

8. Claims 1-3, 6-13, 15-19, 22-29, 31-37, 40, 43-53, 56 and 59-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,838,563 ("Dove") in view of U.S. Patent No. 6,665,648 ("Brodersen").

**Regarding claim 1**

Dove teaches the invention including a method for configuring, via a computing device having a display device and an input device, a function block associated with a process plant, the method comprising: providing a first graphical user interface via the display device to configure values of at least some outputs of a plurality of outputs of the function block for each of at least some states of a plurality of states, wherein the graphical user interface includes a plurality of graphical elements, wherein at least some graphical elements of the plurality of the graphical elements are associated with respective pairings of ones of the at least some states with ones of the at least some outputs is taught as a method for configuring a process control environment in accordance with a process environment view (see C 4 L 20-35), wherein the process control environment includes a template generator and a control template library which contains data representing sets of predefined or existing control template functions for use in process control programs (see C 6 L 40-60), wherein the template generator includes display screen that allow user to associate a particular control templates with a plurality of attribute functions such as inputs, outputs and other attributes (see C 6 L 59 to C 7 L 13); wherein the at least some outputs are to be used, at least in part, to effect one or more physical functions within the process plant is taught as a configuration model contains many configuration aspects including control, I/O, process graphics, process equipment, alarms, history and events (see C 8 L 24-30); receiving output

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configuration data via the graphical user interface is taught as communicating maintenance information among various instruments and equipment in a physical plant (see C 8 L 31-46); and storing the output configuration data on a first computer readable medium associated with the function block is taught as storing configuration data in a control template library database (see C 7 L 6-13).

Dove does not specifically teach the function block to implement a plurality of states for a state machine.

However, Brodersen discloses a system that utilizes state models of objects for monitoring a process, wherein the objects include sets of functions, and variables that incorporate into programs, routines, subroutines, functions, and applets, wherein the plurality of states, transitions, and extracted rules make up a state machine execution engine (see abstract, C 1 L 56 to C 2 L 22) for the purpose of allowing end users to develop business applications customized to their needs (see C 1 L 29-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the state machine of Brodersen with the system of Dove because it would provide for the purpose of allowing end users to develop business applications customized to their needs.

#### **Regarding claim 17**

Dove teaches the invention including a tangible medium storing machine readable instructions comprising: first code to provide a first graphical user interface via a display device of a computing device to configure values of at least some outputs of a plurality of outputs of a function block associated with a process plant to be implemented by the function block is taught

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as a method for configuring a process control environment in accordance with a process environment view (see C 4 L 20-35), wherein the process control environment includes a template generator and a control template library which contains data representing sets of predefined or existing control template functions for use in process control programs (see C 6 L 40-60), wherein the template generator includes display screen that allow user to associate a particular control templates with a plurality of attribute functions such as inputs, outputs and other attributes (see C 6 L 59 to C 7 L 13); wherein the at least some outputs are to be used, at least in part, to effect one or more physical functions within the process plant is taught as a configuration model contains many configuration aspects including control, I/O, process graphics, process equipment, alarms, history and events (see C 8 L 24-30); second code to receive output configuration data via the graphical user interface is taught as communicating maintenance information among various instruments and equipment in a physical plant (see C 8 L 31-46); and third code to store the output configuration data on a first computer readable medium associated with the function block is taught as storing configuration data in a control template library database (see C 7 L 6-13).

Dove does not specifically teach the function block to implement a plurality of states for a state machine.

However, Brodersen discloses a system that utilizes state models of objects for monitoring a process, wherein the objects include sets of functions, and variables that incorporate into programs, routines, subroutines, functions, and applets, wherein the plurality of states, transitions, and extracted rules make up a state machine execution engine (see abstract, C

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1 L 56 to C 2 L 22) for the purpose of allowing end users to develop business applications customized to their needs (see C 1 L29-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the state machine of Brodersen with the system of Dove because it would provide for the purpose of allowing end users to develop business applications customized to their needs.

**Regarding claim 33**

Dove teaches the invention including a method of implementing a function block for use in controlling one or more field devices in a process plant, the method comprising: providing a graphical user interface via a display of a computing device to configure values of at least some outputs of a plurality of outputs of the function block to be implemented by the function block is taught as a method for configuring a process control environment in accordance with a process environment view (see C 4 L 20-35), wherein the process control environment includes a template generator and a control template library which contains data representing sets of predefined or existing control template functions for use in process control programs (see C 6 L 40-60), wherein the template generator includes display screen that allow user to associate a particular control templates with a plurality of attribute functions such as inputs, outputs and other attributes (see C 6 L 59 to C 7 L 13); wherein the at least some outputs are to be used, at least in part, to effect one or more physical functions within the process plant is taught as a configuration model contains many configuration aspects including control, I/O, process graphics, process equipment, alarms, history and events (see C 8 L 24-30); receiving output configuration data via the graphical user interface is taught as communicating maintenance



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information among various instruments and equipment in a physical plant (see C 8 L 31-46); storing the output configuration data on a first computer readable medium associated with the function block; receiving at least one input associated with the process plant; changing a current state of the state machine, if necessary, based, at least in part, on the at least one input; retrieving, based on at least the current state, output configuration data associated with the current state from the first computer readable medium is taught as storing configuration data in a control template library database (see C 7 L 6-13); and setting the at least some outputs based, at least in part, on the retrieved output configuration data is taught as a run-time implementation fetches selected equipment modules by interfaces to the configuration data (see C 8 L 13-23).

Dove does not specifically teach the function block to implement a plurality of states for a state machine.

However, Brodersen discloses a system that utilizes state models of objects for monitoring a process, wherein the objects include sets of functions, and variables that incorporate into programs, routines, subroutines, functions, and applets, wherein the plurality of states, transitions, and extracted rules make up a state machine execution engine (see abstract, C 1 L 56 to C 2 L 22) for the purpose of allowing end users to develop business applications customized to their needs (see C 1 L 29-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the state machine of Brodersen with the system of Dove because it would provide for the purpose of allowing end users to develop business applications customized to their needs.

**Regarding claim 47**

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Dove teaches the invention including a function block entity for use in a process plant having a processor adapted to control one or more field devices, the function block entity comprising: a user modifiable configuration database including output configuration data indicative of values of at least some outputs of a plurality of outputs of the function block to be implemented by the function block is taught as a method for configuring a process control environment in accordance with a process environment view (see C 4 L 20-35), wherein the process control environment includes a template generator and a control template library which contains data representing sets of predefined or existing control template functions for use in process control programs (see C 6 L 40-60), wherein the template generator includes display screen that allow user to associate a particular control templates with a plurality of attribute functions such as inputs, outputs and other attributes (see C 6 L 59 to C 7 L 13); wherein the at least some outputs are to be used, at least in part, to effect one or more physical functions within the process plant is taught as a configuration model contains many configuration aspects including control, I/O, process graphics, process equipment, alarms, history and events (see C 8 L 24-30); a first computer readable medium; a code stored on the first computer readable medium to receive at least one input associated with the process plant is taught as communicating maintenance information among various instruments and equipment in a physical plant (see C 8 L 31-46); a code stored on the first computer readable medium to set the at least some outputs based, at least in part, on the retrieved output configuration data is fixed is taught as storing configuration data in a control template library database (see C 7 L 6-13); and a code stored on the first computer readable medium to retrieve, based on at least the current state, output configuration data associated with

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the current state from the configuration database is taught as a run-time implementation fetches selected equipment modules by interfaces to the configuration data (see C 8 L 13-23).

Dove does not specifically teach the function block to implement a plurality of states for a state machine; a code stored on the first computer readable medium to change a current state of the state machine, if necessary, based, at least in part, on the at least one input, wherein the code is fixed.

However, Brodersen discloses a system that utilizes state models of objects for monitoring a process, wherein the objects include sets of functions, and variables that incorporate into programs, routines, subroutines, functions, and applets, wherein the plurality of states, transitions, and extracted rules make up a state machine execution engine (see abstract, C 1 L 56 to C 2 L 22); a state transition defines an allowable migration of an object from one state to the next (see C 6 L 25-37) for the purpose of allowing end users to develop business applications customized to their needs (see C 1 L 29-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the state machine of Brodersen with the system of Dove because it would provide for the purpose of allowing end users to develop business applications customized to their needs.

#### **Regarding claim 63**

Dove teaches the invention including a method of implementing a function block for use in simulating control of one or more field devices in a process plant, the method comprising: providing a graphical user interface via a display of a computing device to configure values of at least some outputs of a plurality of outputs of the function block to be implemented by the

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function block is taught as a method for configuring a process control environment in accordance with a process environment view (see C 4 L 20-35), wherein the process control environment includes a template generator and a control template library which contains data representing sets of predefined or existing control template functions for use in process control programs (see C 6 L 40-60), wherein the template generator includes display screen that allow user to associate a particular control templates with a plurality of attribute functions such as inputs, outputs and other attributes (see C 6 L 59 to C 7 L 13); wherein the at least some outputs are to be used, at least in part, to simulate operation of at least one of a process control system and a safety system associated with the process plant is taught as a configuration model contains many configuration aspects including control, I/O, process graphics, process equipment, alarms, history and events (see C 8 L 24-30); receiving output configuration data via the graphical user interface is taught as communicating maintenance information among various instruments and equipment in a physical plant (see C 8 L 31-46); storing the output configuration data on a first computer readable medium associated with the function block is taught as storing configuration data in a control template library database (see C 7 L 6-13); receiving at least one input associated with the process plant is taught as communicating maintenance information among various instruments and equipment in a physical plant (see C 8 L 31-46); retrieving, based on at least the current state, output configuration data associated with the current state from the first computer readable medium; and setting the at least some outputs based, at least in part, on the retrieved output configuration data is taught as a run-time implementation fetches selected equipment modules by interfaces to the configuration data (see C 8 L 13-23).

Dove does not specifically teach the function block to implement a plurality of states for a state machine; changing a current state of the state machine, if necessary, based, at least in part, on the at least one input.

However, Brodersen discloses a system that utilizes state models of objects for monitoring a process, wherein the objects include sets of functions, and variables that incorporate into programs, routines, subroutines, functions, and applets, wherein the plurality of states, transitions, and extracted rules make up a state machine execution engine (see abstract, C 1 L 56 to C 2 L 22); a state transition defines an allowable migration of an object from one state to the next (see C 6 L 25-37) for the purpose of allowing end users to develop business applications customized to their needs (see C 1 L29-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the state machine of Brodersen with the system of Dove because it would provide for the purpose of allowing end users to develop business applications customized to their needs.

**Regarding claims 2 and 18**

Dove teaches the invention including wherein the plurality of graphical elements comprises a plurality of cells, wherein the cells of the plurality of cells are associated with respective pairings of ones of the at least some states with ones of the at least some outputs is taught as a method for configuring a process control environment in accordance with a process environment view (see C 4 L 20-35); and wherein receiving the output configuration data comprises receiving output configuration data associated with at least some of the plurality of cells via the input device is

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taught as communicating maintenance information among various instruments and equipment in a physical plant (see C 8 L 31-46).

Brodersen teaches the invention including the output configuration data of each cell of the at least some of the plurality of cells is indicative of a desired value of the corresponding output when the state machine is in the corresponding state is taught as the state machine ensures that the objects go through the desired process defined by the state model (see C 6 L 39-46).

**Regarding claims 3 and 19**

Dove teaches the invention including displaying on the display device indications of the output configuration data in appropriate cells of the plurality of cells is taught as a graphic generator displays on display screens graphical views associated with particular control templates (see C 7 L 1-13).

**Regarding claims 6 and 22**

Dove teaches the invention including receiving data, via the input device, indicative of a number of outputs in the plurality of outputs; and determining a number of cells in the plurality of cells based on the number of outputs is taught in C 8 L 31-46.

**Regarding claims 7 and 23**

Brodersen teaches the invention including receiving data, via the input device, indicative of a number of states in the plurality of states; wherein determining the number of cells in the plurality of cells comprises determining the number of cells based on the number of outputs and the number of states is taught in C 5 L 48-58.

**Regarding claims 8 and 24**

Brodersen teaches the invention including receiving data, via the input device, indicative of a number of states in the plurality of states; and determining a number of cells in the plurality of cells based on the number of states is taught in C 5 L 59-65.

**Regarding claims 9 and 25**

Brodersen teaches the invention including receiving data, via the graphical user interface, indicative of whether one or more, if any, of the at least some outputs should be forced to a particular value irrespective of a current state of the state machine is taught in C 6 L 17-25.

**Regarding claims 10 and 26**

Brodersen teaches the invention including providing a second graphical user interface via the display device for specifying how the state machine is to transition among states of the plurality of states, wherein the graphical user interface includes a plurality of graphical elements, wherein at least some of the graphical elements can be used to specify that the state machine should transition between states based on at least one input to the function block is taught as the state machine is to transition among states of the plurality of states based on when prerequisite for transitions are met (see C 5 L 21-29); wherein the at least one input is to be associated with the process plant; receiving state transition data via the second graphical user interface is taught in C 7 L 27-34; and storing the state transition data on a second computer readable medium associated with the function block is taught as storing configuration data in a control template library database (see C 7 L 6-13).

**Regarding claims 11 and 27**

Dove teaches wherein the at least one input is to be received from at least one other function block associated with the process plant (see C 6 L 21-39).

**Regarding claims 12 and 28**

Dove teaches wherein the at least one input is to be received from an operator interface (see C 7 L 14-22).

**Regarding claims 13 and 29**

Dove teaches wherein the first computer readable medium comprises the second computer readable medium (see C 7 L 66 to C 8 L 12).

**Regarding claims 15 and 31**

Dove teaches wherein the plurality of outputs of the function block are to be provided to a process control system associated with the process plant (see C 6 L 21-39).

**Regarding claims 16 and 32**

Dove teaches wherein the plurality of outputs of the function block are to be provided to a safety system associated with the process plant (see C 6 L 21-39).

**Regarding claims 34 and 48**

Dove teaches wherein the at least one input is to be received from at least one other function block associated with the process plant (see C 6 L 21-39).

**Regarding claims 35 and 49**

Dove teaches wherein the at least one input is to be received from an operator interface (see C 7 L 14-22).

**Regarding claims 36 and 52**

Brodersen teaches the invention including wherein the output configuration data includes data indicative of whether one or more of the at least some outputs should be set to a particular value irrespective of the current state of the state machine is taught in C 6 L 17-25; wherein setting the



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at least some outputs is further based, at least in part, on the data indicative of whether the one or more of the at least some outputs should be set to the particular value is taught as the state machine is to transition among states of the plurality of states based on when prerequisite for transitions are met (see C 5 L 21-29).

**Regarding claim 37**

Brodersen teaches wherein the at least one input comprises an increment input and a decrement output; wherein changing the current state of the state machine comprises incrementing the current state if the increment input indicates that the current state should be incremented; and wherein changing the current state of the state machine further comprises decrementing the current state if the decrement input indicates that the current state should be incremented is taught as a state transition that migrate an object from one state to the next, wherein the state transition definition can verify that specific conditions have been met before the transition occurs (see C 6 L 25-37).

**Regarding claims 40 and 56**

Brodersen teaches receiving an input indicative of whether the function block is to be disabled; and if the input indicative of whether the function block is to be disabled indicates that the function block is to be disabled, setting the current state of the state machine to a disabled state is taught as a state can be Open, Closed or Pending, wherein a Service Request that is in a Closed state may be considered “frozen” (see C 6 L 17-25).

**Regarding claims 43 and 59**

Brodersen teaches the invention including receiving an input indicative of whether the state machine function block is to be set to a desired state; receiving an input indicative of the desired

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state; and if the input indicative of whether the state machine function block is to be set to the desired state indicates that the state machine function block should be set to the desired state, setting the current state of the state machine to the desired state is taught as a state transition defines for a specific condition to occur to allow migration of an object from one state to the next (see C 6 L 25-37).

**Regarding claims 44 and 60**

Brodersen teaches providing at least one output of the plurality of outputs that is indicative of the current state of the state machine.

**Regarding claims 45 and 61**

Dove teaches wherein the plurality of outputs of the function block are to be provided to a process control system associated with the process plant (see C 6 L 21-39).

**Regarding claims 46 and 62**

Dove teaches wherein the plurality of outputs of the function block are to be provided to a safety system associated with the process plant (see C 6 L 21-39).

***Allowable Subject Matter***

9. Claims 4, 5, 14, 20, 21, 30, 38, 39, 41, 42, 54, 55, 57 and 58 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner *Thomas Pham*; whose telephone number is (571) 272-3689, Monday - Thursday from 6:30 AM - 5:00 PM EST or contact Supervisor *Mr. Anthony Knight* at (571) 272-3687.

Any response to this office action should be mailed to: **Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450**. Responses may also be faxed to the **official fax number (571) 273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**Thomas Pham**  
*Patent Examiner*

A handwritten signature in black ink, appearing to read 'Thuy Pham', with a long horizontal flourish extending to the right.

June 26, 2006